			No:	
Chapter 1			Date	: /
1-1,1-2	for me!!		reitalia.	a) law
· RStudio is	, required. (1	User friendly, e	easier to 1	nse)
		ofe Lakers		
1-3 Basic Av	ithmetic & Ca	dine.		
			lps c	
· Assign valu	e: nse "=			
2.9.	eccursoul se		as who I say	Stalle !
> X = 1	4 1 4 1		*y是Nun	
	() 7	> 4	TT	
[1]]]	eitheris	_	这样	リオ是エ
> X	fine			
[1] []		X does not	t equal to ?	X
/				
- Tember Sy				
· (s() : reti	arn all object	names.	2000年度7月 23	# 9
	avn all object	, names.	resolvented as	* 9
erg.	arn all object	, p	直合自えか1と口書	
e.g. >× < 11	arn all object		直合自えか1と口書	
erg. >X < 11 > y < 7	arn all object	, p	面含自元为化的。 "双","y"))	
erg. > X < 11 > y < 7 > 15()	arn all object	o ym(list=c(等同:ym(x	面含自克力化 10季("""""""")) ., y)	使用
erg. >X < 11 > y < 7	avn all object	o rm(list=c(面含自克力化 10季("""""""")) ., y)	使用
eng. > X < 11 > y < 7 > 15() (1) "x"	y"	o ym(list=c(質問: ym(x m (list=1st)	面含自克力化 10季("""""""")) ., y)	使用
e.g. > X < 11 > y < 7 > 15() (1) "x" "	y" elete x = Y	ym(list=c(素同:ym(x m (list=1st)	面含自克为化 畸形 () () () () () () () () () (使用
e.g. > X < 11 > y < 7 > 15() (1) "x" "	y" elete x = Y	o ym(list=c(質問: ym(x m (list=1st)	面含自克为化 畸形 () () () () () () () () () (使用
e.g. > X < 11 > y < 7 > 15() (1) "x" "	y" elete x = Y	ym(list=c(素同:ym(x m (list=1st)	面を自えか化 min (换用
eng. > X < 11 > y < 7 > 15() (1) "x" " Ym(x) : de Variable (a	y" elete x = Ye n be x, x	アル(list=c(素同: ym(x mm (list=1st)) emove(x)	面を自えか化 min (换用
eng. > X < 11 > y < 7 > 15() (1) "x" " Ym(x) : de Variable ca (hav.	letex = 18 n be x, x	アM(list=C(等同:YM(X) Pm(list=1st) Pm(list=1	あ 合自 えか(と) きっぱ () 、	换用

Date: /			L parquil 1
· Several (alc	ulation	(3.9)	
> X + Y	> 42	>exp(y)	
> X - Y	> 58vt(y)	> log2(y)	
> x * ý	> y^(1/2)	> abs (-14)	
> X/Y	> log(y)		
. In complete	command	ing come lengths	the property of the property of
eig.		N. E. L.	
> 58 rt (y			- (x) 34/44 -
+ will foll	low with a "+"	*escape of HED	1 000
			11 25 88
· [:] ast	command	13.	11 [17]
		×6,12	2 / 2
· Use # as	, comment	3 / 2 NOR Just 1	a mental . Il Illi
. 6. 2.1.	- W. A. C. of 1980		
1-4 Vectors	& Matrices'	271 1 200 V	
	(// × / * ·	(9) 2	Pake
· Vectors : (c(,,)*	: concatenate	Mad Die
	Hist Consti		
> XI < C(1	.3,5,1,9)	>gender < c('	
7 X I	315-11-13	0	District Control
[1] 135	19	(1) "male" "f	emale"
		Sh F	
1-0-0-0		TO THE REAL PROPERTY.	, YAM J
· Sequence	7-3	1 11	
2.9. > 2:7	(x)	> seg (from=1,	
2.9. > 2:7	5 67 400	(1) 12345	67
2.9. > 2:7	(x)	(1) 12345	

```
No:
 Date:
  · Matrix : (c(~), nrow = ?, byrow = TRUE/FALSE)
 e.g. > matrix (c(1,2,3,4), nrow=2, byrow=TRUE)
         [1] [1]:第一行
     [1,] 1 2
                        [1]:第一個位置
     [2,] 3
               4
    > matrix (c(1,2,3,4), nrow=2, byrow=FALSE)
         [,1] [,2]
    [1,] 1
    [2,] 2
                4
     > mat < matrix (1=9, nrow=3, byrow=TRUE)
     > mat (1, 2)
                         > mat [c(1,3),2]
     (1) 2
                           [1] 2 8
     > mat [2,] (All Value in R2) > mat [, 1]
     [1] 456
                           [1] | 47
                         > length (mat)
      > mat * 10
       (10 20 30)
                          (1) 9 (元素尽量)
       40 50 60
                           > class (mat)
                            [1] "matrix" "array
      > matsub < mat[2:3 11:2]
      > matsub
       [,1] [,2]
     [11] 2
     [2,] 5 6
```

No: Date: > aa < data.frame(nickname=c("John", "Mary", "Leo"), weight=60:62, Height = ((160,170,180)) > 0, 0 * matrix会有 , data frame 无. weight Height nickname [1.] 1 John 60 100 [2,] : 2 Mary 170 61 180 62 3 Lev * > View (aa) > class (aa) (1) "data, frame" 为时出 aa的图表

1-5 Import/Copy Data fr		
·CSV * 光將 excel 存為.c	sV科	ated dragat 6 2/19
6.9、方法一	1700	at Day I Was "
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> datal	Sep. 3 MA	-) choose +
100011	or that Glocke As All	Lede President Co.
2 0 0		fil was
3 0 0	List mark to Dill a	1
5 0 0		4
0.0 2 1 -	7 4	to Expert Pota From
e.g. 方法-	tain 6 wheet	TRUE
> data Z < read. table 1	(file choose (), header	
dītto		Islant, street
		A.
V / V = 0.77	Type Lead - still s	etablished strong
ナノナ		
·TXT		
包多方法一	(file, choose (), header	=T) sleer stone
é.g.方法— > data3 ← yead.delim	(file, choose (), header	= T)
2·g·方法— > data3 ← yead.delim	(file, choose (), header	
e.g.方法一 > data3 < yead.delim	(file, choose (), header	1900 of the last
e.g.方法一 > data3 < yead.delim ditto	\$1.2 \(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2	ta
e.g. j===================================	\$1.2 \(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2	ta
e.g.方法一 > data3 < yead.delim ditto	(file.chouse(), head	ta

-56 Import/Read Excel Data	into R wine	RStudio (read	×1)
			mpot .xlsx 2 .xls
· File -> Import Dataset -> from	n bxcel -> B	rowse	
* 言用整 Import Options	-		
* 電車 Data Preview (char	, Int, skip	.etc)	
内害士	type		
* Lode Preview = Copy Code	400	A 7 1	4815
b File > A	lew File >)	R Script > R	WW
	1		
- b Export Data from R			
	7-2-1-13	e state in	2-13
The most flexible command	for exportin	ng data from	Ris
Write table		•	0.918
٠.9.	file has	me	
write, table (data2, file = "D	ata2.csv",	sep=",")	
data want to expov	七 周理了改為	a.txt "It"	TATE
		ħ	NET .
write, table (dataz, file = "		, vow-names =	E, sep = ",")
	巴在比多科村当	不会存第一行も	
77	自己为耳及代.	与也可以写 (1)、	hame = F
ý et			
write table (data 2, file = "/L	Isevs//Do Inding file pat		ep = ", ")
		nt working direc	tory
,,,		7	V

		No:
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1-7 Import/Check/Wor	k with bata in R	adad g gilleral (1)
· See Dimensions (row/co	lumn) / Part of Dat	A Marie Religional
eig. > dim(data2)	() () () ()	
(1) 10 1 vow col.	ete Tx R with Spee	Cressily woman c
	dune" "danes	(I) Smake Next
> head (data2)	> tail (data2)	
n ata - > (2 2 2 1 1		
> Ann 2 worthing days and	6	
4	-	
6	9	- Picera Di
first b vows	last 6 vows	
ţ ,	10 :	
<u> </u>	10	
h '	STATES IN VALLE PAR	energy (1) lavel
names (data2)	Je (vehi	Related drive
[1] "data2", "Age",		variables in data
		(-15-200)
(30) [10.3	mang 4 (0.0.000)	
		(x) 1653
		35110000

1 6 1 2 1		
1-8 Variables & Data in R	the same passed for the same	
. Newsort Newsort	· Company of the Name of the Company	
· Names () = variables in th		
> names (DataX)		
	L'h W.	
[1] "Smoke" "Age" "Heigh	Mender 1 (Sassa)	Earl C
- Mean	9.0.27.5	
eg.	*直接写Age: Not found	F
> mean (DataX \$ Age)	常写 DataX(\$)Age	ø.
[1] 12,3269		j
[1] 121) 26	方法=(attach the data)<	与 了以各样
41	> attach(bataX)	> detach (Nate)
13 1 1-1-1 5	, mean(Age)	> Age
19	[1] 12,3269	> Not found
- Substt	01	
- Levels () : Lategories Th	variables	
eg.		
>levels (DataX & Gender)	* > class (batax \$ G	ender)
[1] "female" "male"	(i) "factor"	
Media California		
· Summary ()		
2,9,		
D >x < c(0,1,1,1,0,0,0,0,0,0) > summary(x)	
> class (x)	Min. 1st Qu Medio	n Mean Q3 Max
> "numeric"	0,00 0,00 0,00	0.3 0.75 1.00

			No:		
			Date:	/	9101
② > X ← as, factor (x)	>summ	ary (x)	nikal sij	4-)	21-1
> class (x)	0 1	Q			
(1) "factor)	1 3		and d		
> (r two(v)					
1-9 Subset (Sort/Select) Data	In R with	Square	Bracket	5 006	
(7:17 E 100.17)			9 10/11		
- Review Previous Sessions					
> attach(Datax)					
		7			
(1) 19 17 12 10					
> DataX (11:14,]			(Few)		60
	Stay Prairie				
11/2012 230 e "/wan/ /8					
14 Table Slabel & set MD	7				
- Subset					
e-g. mean (Age (Gender = = "fema	le"])	pa U			
[1] 12.44972					
> FemData + Data X [Gorder =	= "female",]			
> MaleDverISE DataX (Gender =			,]		
Tolerate I should previous too					
The Court Prince Beauty Thomas					
					-

ate: / MACE		
1-10 Logic Statements (T/F)), chind & rhind Fur	ictions in R
J	10 7 7	
· Logic statements		(rotto) [[]
eig,		
> Age [1:5]	> temp2 €	as.numeric (Age > 15)
(1) 6 18 16 14 5	>temp2[1:5]
> temp < Age > 15	[1] 0 111	. Kayland, English to O o
> temp[1:5]		(Rosell Harton
(I) FTTFF	Yeurus 173	(#1-11) 97 A 1
		01 21 Pr Pr [13
e-y. Chind (Femsmoke + Gen	der == "female" & Smo	ke == "yes")
> More Data & chind (Dat		1707917-004
> More (1=5,)		TI.
DataX Age Height	- Fernsmoke	
2	T	
4	F	
5	(1F)/m-1)"==	
		SIFE SIGN
	Litary - James	

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	Date:	/	9
1-11 Set up Working Directory in R	at their pe		
find out current working directory	Serior 169		
>getwd()	Mary A e m		
[1] "/Users/"			
	thereto much	94 : d	6
set wd			
O full path		J. J.	×
> setwd ("/Users/ / Project 1")	(20) 304	60	1 -
> setwd ("~/ Desktop/Project (") ?	Present and He	7881	4
§			
> project WD = "/Users/ - · / Desktop / Proje	ct l'appalant	haten	1.
	e Trapaling		
@ Tools -> Globel -> set WD			
A). Care facility	a grant of St	Motts	5
. save. image () = save my current workspo	ill		
> save, image ("First Project. Rdata")) is pudoug a		
	instal willed	100	
session > save workspace as			
(, , , , , , , , , , , , , , , , , , ,			
· load () : load previous workspace Tmag	Jeo 1711 ()	a word	
> loud ("First Project . Rdata")		renij:	
AND THE RESERVE	I r below warming to	i Feyer C-	
MA 3		ny etr	
A Prince	1.12 -4.1943299	En large	

No: Date: I-12 Writing Scripts in R Create new script /Open File > New > R script / File > Open File Tab: return options Save File -> Save (as)
1-12 Writing Scripts in R Create new script / Open File → New → R script / File → Open File Tab: return options Save File → Save (as)
· Create new script /Open File → New → R script / File → Open File · Tab: return options · Save File → Save (as)
File -> New -> R script / File -> Open File Tab : return options Save File -> Save (as)
· Tab : return options · Save File -> Save (as)
· Save File -> Save (as)
· Save File -> Save (as)
File -> Save (as)
File > Save (as)
1-13 Install Packages in R
J
· install-packages () if know package name
> install-packages ("epi R")
ON for a ladde a right
Selection = 12 (choose a number)
trantinos fortes so totas () asisai. SVa t
> install. packages () > vemove.packages (epil
> Install. packages () > vemove packages (epiR Londing Tel/Tk Interface done
by R will return menu of all packages available
y to the provide of t
· library (): use all function in the package
291
> 1. brary (epi R)
will disappear when ending the R session
www.r-project.org . CRAN
5) find all packages on this website
4

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ACOUNTY EXTEN	Date:
1-14 Customizing the Look of	- R
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e.g. Appearance = Font size,	
Pane Layout	
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2021/10/15上課筆記	HI HELSEN	Date: /
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· 175t ()	FE 1. 72 % "1	() tilg -++1
> dd e list ("gwe", s	90, "ZEB") >ff	+ list (dd, c(1,2,3))
> dd	>+f	x = 1 2 11 c = +2 5 = 9 99
(a))	((1))	74
[1] "que"	((1)]((1)]	(1)
[[2]]	[1]	"Ewe"
[1] 590	Taylog i	ditto.
[[3]]	-	the part of the first
[1] "288"	det test many 3	Transfer of the
Safete and the Company	", posta (t said "said	如何是相上的多行
·fov回圈		in the
> for (i in-3:1) {	> 44 €	matrix (NA , nrow=6, nco)
for (j in 6=9) {	•	in 1:2) {
print (c(i,j))	fo	r (i in 1=6) {
}		$yy(i,j) \in i+4+(j-1)^*$
}	}	(x) the extension
[1] -3 6	(12) (12)	10H 1093100 9 22
(1) ditto	> 44	
	[,1] [,2] - 10 W MAY [
	(1,) 2	11
41.		1 200 1 70 30
10 Fee Start	. 7	
	,	15
1000	e la gray	0 16
Acres Jacky	CARIT REAL	Salar Salar Salar
10 PF (1)		
	115	

	2021/10/22上課堂記	
· str-split ()		
> kk = "abidefo	gheijk"	
> pp < str-spli	,	stringr有件
> pp		O .
((1))	女り果要以2	他以上的守母教切矣。
[1] "abcd" "fgh"	" "jk" 可以鹅"e"	"改為"dlh"效是"[Jh]"
> class(pp)		abc" "efg" "eijk"
(1) c'dist'	50,000	200 mm = 4 mm = 1 (413)
>	and the same	and her 1888 14
> jj < stv_spli-	t(kk."")	ar Atting Title
, 23		. # 2 +++
((1))		Milenismie
[1] "a" b"	` k"	at a (Period i) vel
> (41)	20 1 1 40 t	((Elija)) takang sa
> kk + "John Wa	ang"	
> yy < str-spli	t(kk,"")	
> ZZ < paste 0	("Mary ", yy[[1]]	[2])
> 22	A PE	17 A (1)
[1] Mary Wang	(5) (1)	
	11 2 149 1	n !!
· pdf_text() +	#使用pdf tools 套件	"/"一定要
	text (past 0 (getwdl),"/末当的.pdf"))
5 邦1	df补生内容	
> text < pdfTex	t(1) (page1)	- p65t l
> post < str-10	cate (text 1, "發文字j	h") start end
		[1,] 44 47

post2 < stv_locate(text1, "彭院商门的…") > post3 < stv_locate(text1, "注意") > post2				No:	
> post 3 e stv_locate (text1, "主旨") > post 2 > post 3 Start end [1,] 49 64 [1,] 67 68 > stv_sub(text1, post[1,2]+2, post3[1,1]-3) [1] "章3P完 " 683j庆" > 放post 2 start end to start			77.5011	Date:	,
> post 3 e stv_locate (text1, "主旨") > post 2	> post2 < str-100	ate(text1, "章3)完	節(110 ")		
> post 2	•				
[1,] 49 64 [1,] 67 68 > stv_sub(text1, post[1,2]+2, post3[1,1]-3) [1] "章3P完 … 683j庆" > *** ** *** *** *** *** *** *** *** *	•				
> stv_sub(text1, post[1,2]+z, post3[1,1]-3) [1] "章引完 … 683j庆" >		sta	rt end		
> stv_sub(text1, post[1,2]+z, post3[1,1]-3) [1] "章引完 … 683j庆" >	[1,] 49 64	[1,] 6	.7 68		
> stv_sub(text1, post[1,2]+2, post3[1,1]-3) [1] "章写完 … 683j底" > > > > ** ** ** ** ** *	>				1.51
> wantedString < str_sub(text1, post1(1,2)+2, post3[1,1]-3) > file. rename ("1.pdf", paste D (wanted string, ".pdf") 原 第7楼名 - all Files < list. files (getwd(), full.names=F)	> stv_sub(text		post3[1,1]-3)		
> wantedString < str_sub(text1, post1(1,2)+2, post3[1,1]-3) > file. rename ("1.pdf", paste D (wanted string, ".pdf") 原 第7楼名 - all Files < list. files (getwd(), full.names=F)	[1]"章别是 … (6835底"		x *	1
> WantedString < str_ sub(text1, post1(1,2)+2, post3(1,1)-3) > file.vename ("1.pdf", paste0 (wanted string, ".pdf") 原 第7楼名 - all Files < list.files (getwd(), full.names=F)			京成 post 2	Startsend	包包
>file.vename ("1.pdf", paste D (wanted string, ".pdf") 原 第7楼台 -all Files list.files (getwd(), full.name(=F)	> Wanted String + s	tr_sub(text),	post 1(1,2)+2, p	ost3[1,1]-	3)
本 対権名 - all Files < list.frles(getwd(), full.name(=F)	U				
		TĀ.	新福名	,	
)	
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